

## **ABSTRACT**

**[0046]** Methods in accordance with the present invention can include determining a position of a head along a stroke by locating one or more marker-zones printed to a reference surface of a disk. The one or more marker-zones can be printed to a portion of the reference surface as one or more pulses from a template pattern that can further comprise a plurality of chevrons. In one embodiment, each pulse can trace the motion of the stroke along at least a portion of the radius of the reference surface. A pulse can identify a marker-zone edge when the pulse disappears at some radius from the center of the disk. By moving the head along the stroke, the marker-zone edge can be detected and a gross position determined. A fractional position can be determined by measuring a phase of a chevron located at substantially the same radial location as the edge.